

**Remarks**

Applicants have received and carefully reviewed the Office Action mailed September 8, 2006. Claims 16-40 are pending. Reconsideration and allowance of the pending claims are respectfully requested.

**Allowable Subject Matter**

In paragraph 4 of the Office Action, the Examiner indicated that claim 27 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Rejection under 35 U.S.C. § 112, first paragraph**

Claims 16-40 are rejected as failing to comply with the written description requirement. The Examiner asserts that the originally filed specification fails to disclose "intentionally patterned background" and "the light and dark areas have an intended interrelationship." Applicants respectfully traverse the rejection. The originally filed specification recites, for example:

The patterned background is designed so that each mask window contains both light areas and dark areas. In a preferred embodiment, the patterned background is designed so that in each mask window the amount of light area and amount of dark area is approximately equal. FIG. 1 depicts examples of patterns useful in the present invention. The light and dark areas of a pattern are designed so that the brightness value or intensity level of the image pixels corresponding to the light areas is substantially greater than the brightness value or intensity level of the image pixels corresponding to the dark areas. The image pixels corresponding to the dark areas will all have values much less than  $I_{\max}$ , and preferably, they will all have values close to zero. Similarly, the image pixels corresponding to the light areas will all have values much greater than zero, and preferably, they will all have values close to  $I_{\max}$ .

(Emphasis added; see page 5, lines 19-29). Applicants submit that the specification as originally filed describes intentionally patterned backgrounds, and more particularly, intentionally

patterned backgrounds designed with certain characteristics. Additionally, the specification as originally filed provides examples of patterns having a desired intended interrelationship of light and dark areas. See FIG. 1. MPEP 2163.02 states:

The subject matter of the claim need not be described literally (i.e., using the same terms or *in haec verba*) in order for the disclosure to satisfy the description requirement.

Applicants submit that, while the specification may not explicitly recite the phrases, "intentionally patterned background" or "intended interrelationship", the specification and drawings as originally filed clearly provide a written description of the claimed "intentionally patterned background" and light and dark areas having an "intended interrelationship," such that one of ordinary skill in the art would reasonably conclude that the inventor had possession of the claimed invention. Reconsideration and withdrawal of the rejection are respectfully requested.

**Rejections under 35 U.S.C. § 103(a)**

Claims 16, 17, 20, 21, 23-26, 28-33, and 35-40 are rejected as being obvious over Ng (US 5,731,832) in view of Tsikos et al. (US 5,065,237). The Examiner acknowledges that Ng fail to teach an intentionally patterned background or light areas and dark areas having an intended interrelationship, but asserts that it is obvious that Ng would work with any type of background, whether patterned, intentionally patterned or not patterned at all. The Examiner also asserts that it would have been obvious to one of ordinary skill in the art to incorporate the intentionally patterned background of Tsikos into Ng's object detection system "because Ng's system would work with any type of background image including an intentionally patterned background".

Applicants respectfully traverse the rejection. Applicants submit that there is no motivation or suggestion for one of ordinary skill in the art to combine the teachings of Ng and Tsikos et al. Ng appears to be directed to a system for detecting motion in a video signal by detecting differences between a current live image and a reference image, while Tsikos et al. appears to be directed to a system of detecting the edge of an object (e.g. envelope) on a conveyor belt. Tsikos et al. do not appear to teach a reference image or anything relating to

comparing a live image with a reference image. In the system of Tsikos et al., the patterned background moves with the object to be detected and substantially parallel to the scan lines of image capture device. Tsikos et al. appear to analyze the scan lines of a current video image to detect breaks in the known pattern on the conveyor belt in order to detect the edge of an envelope or the like. Thus, in Tsikos et al., no reference image appears to be needed. The method of Tsikos et al. appears to require only detecting a break in the pattern to indicate the presence of an envelope or package on the conveyor belt. Ng, however, requires a comparison of a reference image to a live image in order to determine motion of an object in the images.

Applicants submit that adding the patterned background of Tsikos et al. to the system of Ng would appear to provide no advantage to Ng because Ng already teaches comparing a reference image to the live image. Whatever background happens to be in the reference image of Ng will also be in the live image. Ng appears to function by comparing the position of an object in the live image versus the reference image in order to detect motion of that object. It would appear that adding a patterned background, such as that taught by Tsikos et al., would add nothing to the system of Ng. That is, placing a patterned background into the image of Ng would appear to result in the patterned background being in both the reference image and live image. Because the background would not change between the reference and live images, the patterned background would not appear to add any function or serve any purpose in Ng.

Further, if the Examiner is asserting that an object's position with respect to the patterned background would be determined, then the patterned background would appear to serve the same purpose as the reference image. Thus, even when so argued, the patterned background would appear to be a redundant element in the system of Ng. Applicants submit that there is no motivation for one of ordinary skill in the art to add the patterned background of Tsikos et al., primarily because it would either serve no purpose (if one still compares the reference and live images as Ng teaches for motion detection) or would render the reference image meaningless (if one compares the position of the object with respect to the pattern). As such, Applicants submit

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that either way, there is no motivation for the skilled artisan to add the patterned background of Tsikos et al. to the object motion detection system of Ng.

Additionally, the Examiner's motivation for combining Ng and Tsikos et al. appears to be based on the fact that one of ordinary skill in the art could make the combination, which is not a proper basis for obviousness. MPEP 2143.01 III states:

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)... Although a prior art device 'may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so.' 916 F.2d at 682, 16 USPQ2d at 1432.).

(Emphasis added). Applicants submit that the mere fact that Ng's system may work with any type of background image does not provide the necessary and important motivation or suggestion to make the specific combination with the patterned conveyor belt taught by Tsikos et al. MPEP 2143.01 states:

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000).

and

A statement that modifications of the prior art to meet the claimed invention would have been "'well within the ordinary skill of the art at the time the claimed invention was made'" because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a prima facie case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

(Emphasis added). Applicants submit that neither Ng nor Tsikos et al. provide any motivation or suggestion for combining their teachings or modifying the system of Ng in the manner suggested by the Examiner. Further, the Examiner has not provided any reasoning to support an assertion that such motivation or suggestion is in the knowledge generally available to one of ordinary skill in the art. It would appear that the Examiner is asserting that one of ordinary skill in the art could have modified the system of Ng with the patterned background of Tsikos et al., however, in the absence of the necessary and important motivation or suggestion to make such a modification, the Examiner has failed to establish a *prima facie* case of obviousness.

It is axiomatic that in order to establish a *prima facie* case of obviousness, there must be some suggestion or motivation to modify the references or to combine references to arrive at the claimed invention, where the teaching, suggestion, or motivation is found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. Measuring a claimed invention against the standard established by section 103 requires the oft-difficult but critical step of casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field (see, *In re Dembiczak*, 50 USPQ 2d 1614, 1616-17 (Fed. Cir. 1999)).

The Examiner's stated motivation for incorporating the intentionally patterned background taught in Tsikos into Ng's object detection system that distinguishes live objects from a captured reference image is "because Ng's system would work with any type of background image". Neither Ng nor Tsikos provide any suggestion of such a modification. Thus, the stated motivation to combine Ng and Tsikos cannot be said to be "found in the references themselves". As such, the Examiner must be relying on "the knowledge generally available to one of ordinary skill in the art" to supply the necessary and important motivation to combine Ng and Tsikos.

The Examiner has not, however, provided any indication of why one of ordinary skill in the art would have been motivated to substitute the patterned background of Tsikos for whatever background is naturally present in the reference image of Ng. The Examiner has not asserted

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that the naturally occurring background in Ng is somehow deficient or defective, or that the patterned background of Tsikos would provide any advantage. Thus, the Examiner does not appear to be relying on any knowledge generally available to one of ordinary skill in the art, other than the simple fact that one could use the patterned background of Tsikos in the system of Ng.

The Federal Circuit has made clear:

"The factual inquiry whether to combine references must be thorough and searching." *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52, 60 USPQ 2d 1001, 1008 (Fed. Cir. 2001). It must be based on objective evidence of record. This precedent has been reinforced in myriad decisions, and cannot be dispensed with. See, e.g., *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 USPQ 2d 1456, 1459 (Fed. Cir. 2000) ("a showing of a suggestion, teaching, or motivation to combine the prior art references is an 'essential component of an obviousness holding'" (quoting *C.R. Bard, Inc. v. M3 Systems, Inc.*, 157 F.3d 1340, 1352, 48 USPQ 2d 1225, 1232 (Fed. Cir. 1998))); *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ 2d 1614, 1617 (Fed. Cir. 1999) ("Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references."); *In re Dance*, 160 F.3d 1339, 1343, 48 USPQ 2d 1635, 1637 (Fed. Cir. 1998) (there must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the applicant); *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988) ("teachings of references can be combined *only* if there is some suggestion or incentive to do so.") (emphasis in original) (quoting *ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984)).

The need for specificity pervades this authority. See, e.g., *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ 2d 1313, 1317 (Fed. Cir. 2000) ("particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed"); *In re Rouffet*, 149 F.3d 1350, 1359, 47 USPQ 2d 1453, 1459 (Fed. Cir. 1998) ("even when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill, that suggests the claimed combination. In other words, the Board must explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious."); *In re Fritch*, 972 F.2d 1260, 1265, 23 USPQ 2d 1780, 1783 (Fed. Cir. 1992) (the examiner can satisfy the burden of showing obviousness of the combination "only

by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references") (emphasis added).

(see, *In re Lee*, 277 F.3d 1338, 61 USPQ 2d 1430, 1434 (Fed. Cir. 2002)). In the present case, and as indicated above, there is no objective evidence of record whatsoever that one skilled in the motion detection art (i.e. the knowledge generally available to one of ordinary skill in the motion detection field) would consider the naturally-occurring background in Ng to be deficient in any way. Thus, under a rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references as required by *In re Lee*, Applicant asserts that the Examiner's stated motivation of "because Ng's system would work with any type of background image" is clearly flawed and cannot stand.

The Federal Circuit has also has stated:

Our case law makes clear that the best defense against hindsight-based obviousness analysis is the rigorous application of the requirement for a showing of a teaching or motivation to combine the prior art references. See *Dembiczak*, 175 F.3d at 999, 50 USPQ 2d at 1617. "Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability--the essence of hindsight." *Id*

...

In this case, the district court used the '411 patent as a blueprint, with the Houghton process as the main structural diagram, and looked to other prior art for the elements present in the patent but missing from the Houghton process. The district court opinion does not discuss any specific evidence of motivation to combine, but only makes conclusory statements. "Broad conclusory statements regarding the teaching of multiple references, standing alone, are not 'evidence.'" *Dembiczak*, 175 F.3d at 999, 50 USPQ 2d at 1617. The district court provides no support for its broad conclusory statement that it was known in the art that a carbon bed, as used in the Houghton process, would produce water with high levels of conductivity caused by the presence of ionic contaminants. Nor does the district court then provide support for its implicit finding that given water so contaminated, it would be obvious to one of ordinary skill in the art to place a mixed bed ion exchange resin downstream of the carbon bed. In fact, nowhere does the district court particularly identify any suggestion, teaching, or motivation

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to combine the Houghton process with a mixed bed ion exchange resin to achieve the patented process (emphasis added).

(see, *Ecolochem, Inc. v. Southern Cal. Edison Co.*, 56 USPQ 2d 1065, 1072-73 (Fed. Cir. 2000)). In the present case, the stated motivation for replacing the naturally occurring background of Ng with the patterned background of Tsikos "because Ng's system would work with any type of background image" is merely a conclusory statement, which is unsubstantiated and unsupported by any "evidence" of record whatsoever that shows one skilled in the art would have considered the background of Ng to be deficient in any way. Applicant asserts that relying on such a conclusory statement in an attempt to establish the necessary and important showing of "motivation" to combine under § 103 is clearly improper.

"Virtually all [inventions] are combinations of old elements." *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 698, 218 USPQ 865, 870 (Fed. Cir. 1983); *see also Richdel, Inc. v. Sunspool Corp.*, 714 F.2d 1573, 1579-80, 219 USPQ 8, 12 (Fed. Cir. 1983) ("Most, if not all, inventions are combinations and mostly of old elements."). Therefore an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be "an illogical and inappropriate process by which to determine patentability." *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570, 38 USPQ 2d 1551, 1554 (Fed. Cir. 1996).

The genius of invention is often a combination of known elements which in hindsight seems preordained. To prevent hindsight invalidation of patent claims, the law requires some "teaching, suggestion or reason" to combine cited references. *Gambro Lundia AB v. Baxter Healthcare Corp.*, 110 F.3d 1573, 1579, 42 USPQ 2d 1378, 1383 (Fed. Cir. 1997). "The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." *In re*



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*Fritch*, 972 F.2d 1260, 1266, 23 USPQ 2d 1780, 1783–84 (Fed. Cir. 1992). . . . *In re Debus*, Civ. App. No. 93-1320, slip op. at 3 (Fed. Cir. Dec. 10, 1993) (unpublished).

It appears that the Examiner went out and found corollaries for each of the claimed elements, using the present specification as road map, and then after the fact, made up a motivation to combine the references in attempt to satisfy the basic elements of a *prima facie* 103 rejection. The stated motivation to combine Ng and Tsikos is clearly flawed and not supported by any evidence of record. It seems clear that the Examiner has used the present specification as a blueprint for piecing together elements in the prior art to recreate the present invention. There is no persuasive evidence or findings of record as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected Ng and Tsikos in the first place, and then selected the particular components for combination in the manner claimed. This is clearly improper.

For at least the reasons set forth above, the Examiner has failed to establish a proper *prima facie* case of obviousness with respect to the independent claims 16, 29, and 32. As such, these claims are believed to be clearly patentable over Ng and Tsikos. For similar and other reasons, the claims dependent thereon are also believed to be clearly patentable over Ng and Tsikos.

Claims 18, 19, 22, and 34 are rejected as being unpatentable over Ng in view of Tsikos and further in view of Matsugu (US 2004/0066970). For at least the reasons set forth above, there is no motivation or suggestion for combining the teachings of Ng and Tsikos. Matsugu does not provide the missing motivation or suggestion. Additionally, for similar reasons set forth above, there is no motivation or suggestion for one of ordinary skill in the art to combine the teachings of Matsugu with those of Ng or Tsikos.

Reconsideration and reexamination are respectfully requested. It is submitted that, in light of the above remarks, all pending claims are now in condition for allowance. If a telephone interview would be of assistance, please contact the undersigned attorney at 612-359-9348.

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Respectfully submitted,



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